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IV. *Observations on the Heat of the Ground on Mount Vesuvius: By John Howard, Esq; F. R. S.*

Read Jan. 17, <sup>1771.</sup> **I** BEG leave to lay before this Society, some observations which I made last June, on the heat of the ground on mount Vesuvius, near Naples.

On my ascending the mountain, I often immersed the bulb of a thermometer in the ground, but found no sensible heat for some time: the first rising in my thermometer, was  $114^{\circ}$ ; every two or three minutes, I observed the instrument, till I gained the summit. At those times, I found it rising to  $122^{\circ}$ ,  $137^{\circ}$ ,  $147^{\circ}$ ,  $164^{\circ}$ , and  $172^{\circ}$ : on the top, in two places, where I made the observations, in the interstices betwixt the hard lava, it was  $218^{\circ}$ . Such a degree of heat, after I had overcome the inconvenience of the exhalations, raised my curiosity to know if there was a still greater degree of heat in the mouth of the said mountain. Accordingly, I made a small descent, and, by two observations I carefully and attentively made, my thermometer both times stood at  $240^{\circ}$ .

John Howard.

P. S. It

P. S. If it should be asked, how a person, either to their feet or in stooping or laying down to make the observations, could endure such a degree of heat; I answer, that the heat, both at top and in the mouth of the mountain, was only in particular places. This was known by the fumes ; the hard masses of lava are only warm, and even so tolerable as to permit me, to lay on them, as I was often obliged to do, when the thermometer was immersed, to make a true observation.